III. REMARKS

Claims 1-18 are pending in this application. The following remarks are being made to facilitate early allowance of the presently claimed subject matter. Applicants do not acquiesce in the correctness of the rejections and reserve the right to present specific arguments regarding any rejected claims not specifically addressed. Further, Applicants reserve the right to pursue the full scope of the subject matter of the original claims in a subsequent patent application that claims priority to the instant application. Reconsideration in view of the above amendments and following remarks is respectfully requested.

In the Office Action, claims 1 - 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Woolbright (USPN 5,640,497) in view of Chang et al. (USPN 6,370,579). Applicants submit that the pending claims are allowable for the reasons stated below and thus respectfully request withdrawal of the rejection.

1. The two references relied upon by the Office in the rejections are not analogous art.

The claimed invention pertains to, *inter alia*, the creation of a graphical representation for each fundamental algorithm and the verification of a layered article data preparation based on the combined graphical representation, and aims to provide an improved verification. Applicants submit that Woolbright and Chang et al. are not related to a verification of layered article data preparations.

Woolbright relates to "redesigning layouts [by] adjust[ing] polygon data to develop a new layout which meets new design rules." Abstract. In Woolbright, "original data is developed from the layout to be redesigned," and "[t]he original data is then used to create new data," and

09/683,712   6

the original data and created data are broken down into segments, and the broken down data is "then hit with a wave box 26 until the design is optimum 28." Col. 3, lines 41-56. As best understood, Woolbright's system relates to the revision of an original data representation, i.e., PG data including polygon representations of the actual physical layout, to achieve an optimum redesign of the layout. The current invention does not relate to redesigning a layout, rather it is related to verifying whether a data preparation for a layered article is correct based on a combined graphical representation. In the current invention, a physical chip layout (layered article) never exists and all of the operations are in the stages prior to the actual creation of a physical layout. In contrast, in Woolbright, the redesigning is based on an already existing physical chip layout. In addition, Woolbright is not related to creating a graphical representation for each fundamental algorithm, i.e., instructions on how to generate a layered article, and verification of the layered article data preparations based on the combined graphical representation. In Woolbright, the original data and created data are based on the already existing physical layout instead of a fundamental algorithm that instructs on how to generate a physical layered article. Accordingly, Applicants submit that it is illogic that a person having ordinary skill in the art would consider Woolbright in pursuing verification of a data preparation for articles constructed of multiple design layers.

In addition, Chang et al. is related to "the correction of integrated circuit layouts for optical proximity effects which maintains the original true hierarchy of the original layout." Abstract. Correction of layout design is quite different than verifying design layers that generate the layout. For instance, correction of design layout in Chang et al. and verifying design layers that generate the layout in the current invention are at different stages of designing a layout. Accordingly, Applicants submit that it is illogic that a person having ordinary skill in the art

would consider Chang et al. in pursuing verification of a data preparation for articles constructed of multiple design layers.

In view of the foregoing, Woolbright and Chang et al. are neither in the same field of the Applicants' endeavor, nor reasonably pertinent to the particular problem with which the Applicants are concerned in this invention.

Accordingly, Applicants respectfully request withdrawal of the rejections.

2. There is no motivation or suggestion to combine Woolbright and Chang et al.

Applicants submit that there is no motivation or suggestion to combine Woolbright and Chang et al. Woolbright discloses redesigning a chip layout by breaking down original and created data and hitting the broken down data with a wave box until the design is optimum. Col. 3, lines 54-56. In Woolbright, there is no need to correct the original data (or the created data) by adding any "incremental sum of all the delta planes of the parents cell's children and grandchildren and great-grandchildren, and so on[.]" Col. 9, line 67 - col. 10, line 2 of Chang et al. Accordingly, Applicants submit that the fundamental principles of Woolbright and Chang et al. are different, which makes it unfeasible to combine Woolbright and Chang et al. The Office concluded that the motivation for combination is that "it would provide a model based correction for correcting all areas of the layout in accordance with a particular set of design accuracy rules." Office Action at page 3 citing col. 6, lines 44 - 46 of Chang et al. Applicants submit, however, that Woolbright does not need such a correction of all areas of the layout in accordance with a particular set of design accuracy rules, because in Woolbright, the "correction" (redesign) of the layout is based on the created data that is created using manipulated or unmanipulated original data developed from a physical layout. Col. 3, lines 40-52. Therefore, the correction based on

09/683,712   8

an "incremental sum" in Chang et al., can not be used in Woolbright. In addition, Woolbright does not relate to correcting an inaccuracy in a design layout, instead Woolbright is concerned with redesigning a layout according to new rules. So, in Woolbright, there is no motivation or suggestion to adopt a feature of Chang et al. that is used for correcting an inaccuracy in the layout. Applicants submit that the Office has failed to show a suggestion or motivation to combine, either in Woolbright or Chang et al. or in the knowledge generally available to one of ordinary skill in the art.

In view of the foregoing, Applicants request withdrawal of the rejection.

3. Woolbright and Chang et al., either separately or in combination, do not disclose or suggest each and every claimed feature of the current invention.

Woolbright discloses a method and system for redesigning layouts. Abstract. According to Woolbright, "[o]riginal data is developed from the layout to be redesigned[,]" which is then "used to create new layers, or data 22." Col. 3, lines 41-52. The original data and the created data "are broken down further into segments and subsegments 24." Col. 3, lines 52-54. "The broken down original data and broken down created data is then hit with a wave box 26 until the design is optimum 28." Col. 3, lines 54-57.

Applicants submit that Woolbright does not disclose or suggest, *inter alia*, "creating a graphical representation for each fundamental algorithm[,]" as recited in claims 1, 10 and 13. The Office asserts that Woolbright discloses this feature by disclosing that "<u>a [physical] chip layout</u> is turned into <u>a [data] representation</u> called PG data[,]" and that "[t]he PG data is basically a representation of the chip layout in polygons, such as squares or rectangles." Col. 3, lines 58-61 (emphasis added). Applicants respectfully traverse this assertion because the data

09/683,712   9

representation of a physical chip layout in Woolbright is quite different than the graphical representation for each fundamental algorithm in the current invention. In Woolbright, the conversion is from a physical layout, e.g., wires, insulators, etc, to PG data, i.e., a representation of the layout in polygons. By sharp contrast, in the current invention, the process is from a fundamental algorithm, i.e., instructions on how to generate a physical layout, to a graphical representation thereof. In view of the foregoing, Woolbright does not disclose or suggest "creating a graphic representation for each fundamental algorithm[.]" Chang et al. do not overcome this deficiency of Woolbright.

In addition, Woolbright does not disclose or suggest, *inter alia*, "combining the graphical representations corresponding to each fundamental algorithm according to the restated instruction algorithm to form a combined graphical representation[,]" as recited in claims 1, 10 and 13. The Office asserts that Woolbright discloses this feature by disclosing "creation of the new layer data based on the new design rules to which the new layout must conform, and basic principles of layout design requirements" and combination of layers according to Boolean relationships between the layers. Col. 2, lines 1-2 and 13-15. Applicants respectfully traverse this assertion because Woolbright does not disclose or suggest combination of **graphical representations** of those layers. In Woolbright, the combination is of **actual** physical layers, which is not equivalent, or similar, to "combining the graphical representation corresponding to each fundamental algorithm[.]" The graphical representation in the current invention is not an actual creation of layers as in Woolbright. In view of the foregoing, Woolbright does not disclose or suggest, *inter alia*, "combining the graphical representations corresponding to each fundamental algorithm according to the restated instruction algorithm to form a combined graphical representation[.]" Chang et al. do not overcome this deficiency of Woolbright.
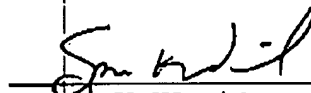
09/683,712   10

Finally, Chang et al. do not disclose or suggest, *inter alia*, as the Office asserted, "determining whether the data preparation is correct based on the combined graphical representation," as recited in claims 1, 10 and 13 of the present invention. The Office asserts that Chang et al. disclose this feature by disclosing that "all correction layers are arithmetically generated" which "allows the final correction layer for a parent cell to equal to the parent cell's delta plane and the incremental sum ..." Col 9, line 60 – col. 10, line 3. Applicants respectfully traverse this assertion because Chang et al. are not related to graphical representation of a data preparation. Chang et al. disclose a method to incorporate "the incremental sum ..." into the delta plane of a parent cell (col. 9, line 67 – col. 10, line 3). However, there is no disclosure or suggestion of "comparison between the combined graphical representation and a graphical representation based on the article" to determine whether the data preparation is correct in Chang et al. Woolbright does not overcome this deficiency of Chang et al.

In view of the foregoing, Applicants respectfully request withdrawal of the rejections.

Claims 2-9 are dependent upon claim 1, claim 11 and 12 are dependent upon claim 10, and claims 14-18 are dependent upon claim 13. The dependent claims are believed to be allowable based on the above arguments, as well as for their own additional features.

Applicants respectfully submit that the application is in condition for allowance. Should the Examiner believe that anything further is necessary to place the application in better condition for allowance, he is requested to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

Spencer K. Warnick
Reg. No. 40,398

Date: July 16, 2004

Hoffman, Warnick & D'Alessandro LLC
Three E-Comm Square
Albany, New York 12207
(518) 449-0044
(518) 449-0047 (fax)

09/683,712   12